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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/336,462 06/18/99 STEIGER

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IM22/0615

EXAMINER

GRENDZYNSKI, M

ART UNIT

PAPER NUMBER

1774

DATE MAILED:

06/15/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trad marks

Office Action Summary

Application No.
09/336,462

Applicant(s)
Steiger

Examiner
Grendzynski, Michael E.

Art Unit
1774



— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on May 8, 2001

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-20 is/are pending in the application

4a) Of the above, claim(s) 10 is/are withdrawn from consideration

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-9 and 11-20 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirements

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☒ Notice of References Cited (PTO-892)

18) ☐ Interview Summary (PTO-413) Paper No(s) _____

16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

19) ☐ Notice of Informal Patent Application (PTO-152)

17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3

20) ☐ Other: _____

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DETAILED ACTION

Election/Restriction

1. Applicant's election with traverse of claims 1-9 and 11-20 in Paper No. 6 is acknowledged. The traversal is on the ground(s) that the ink receiving layers on the recording sheet as defined in claim 1 are the coating compositions of claim 10. This is not found persuasive because intermediate product (the composition of Group II) will lose its identity in the final product (the invention of Group I). The invention of Group I is not a substrate with an aqueous composition thereon. If it were, it could not act as an ink-receptive medium. The composition, however, is an aqueous composition and is distinct for it can be used as an additive in other formulations (e.g., an anti-slip coating) and, furthermore, placed on substrates not contemplated by the instant invention. As such, it may be used to make products other than the product of Group I. Consequently, the burden of MPEP 806.04(h) is met. If applicants provide evidence (or admit) that these inventions are not patentably distinct, the restriction requirement will be withdrawn. The requirement is still deemed proper and is therefore made FINAL.

2. Claim 10 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 6.

Claim Rejections - 35 U.S.C. § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5, 7, 8, 11, 15, 18 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. With

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respect the claim 5, the exact Al_2O_3 intended is not clear. Applicant currently claims a $\sqrt{\text{Al}_2\text{O}_3}$. Was this intended? Was a $\gamma\text{-Al}_2\text{O}_3$ intended?

With specific regard to claims 7, 8, and 11, the exact composition of the sheet is unclear. Does the inorganic oxide further comprise the rare earth metal, does the substrate further comprise the rare earth metal, or does the at least one ink-receiving layer further comprise the rare earth metal?

With specific regard to claim 15, applicant attempts to use a Markush group to claim individual species but includes, as a member of that species, the genus, i.e., inorganic inert particles. This renders the claim ambiguous. It is suggested applicants place the genus and species in separate claims.

With specific regard to claim 18, the exact structure of the layer is ambiguous. It is not clear what comprises the medium. For example, does the substrate comprise the pigment? The lactic acid? Does the ink receiving layer comprise the pigment? The lactic acid? Is the pigment a separate layer while the lactic acid is in either one of the substrate or ink-receiving layer. The possible variations of layer compositions creates ambiguity--the metes and bounds of the claim can not be ascertained.

With specific regard to claim 19, applicant claims a thickness in *meters*. Was this intended? Is micrometers (μm) the intended unit of length?

Claim Rejections - 35 U.S.C. § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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6. Claims 1-3 and 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Malhotra (US 5589277). Applicant claims a recording sheet comprising a support and at least one ink-receiving layer containing a binder, a porous inorganic oxide, and an aliphatic hydroxycarboxylic acid with more than 2 carbon atoms. Malhotra discloses a recording sheet containing lactic acid (i.e., 2-hydroxypropionic acid); *see* col. 18, ll 15-16; binders such as gelatin; *see* col. 23, ll 31-32; and inorganic oxides such as alumina or titanium dioxide; *see* col. 29, ll 10-20. Pigments such as alumina, silica (SYLOID®), or titanium dioxide are all known porous pigments.

With specific regard to claim 16, Malhotra discloses that the recording sheet contains brighteners. *See* col. 29, ll 32-34.

With specific regard to claims 17-18, the coating layer is applied via, e.g., dip coating. *See* col. 29, l 43 through col. 30, l 21. It is inherent that a portion of the coating permeates the substrate, while the remaining portion is part of the ink-receptive coating. Lactic acid and the pigment, consequently, are not only in the same layer (i.e., the substrate), but are in separate layers (i.e., the substrate and the ink-receptive coating).

With specific regard to claim 20, since the layer formed by a dip coating process, it possesses an ink receptive coating on both the front and back sides. *See* col. 29, l 43 through col. 30, l 21. The ink-receptive coating, moreover, functions as an anti-curl layer. *See* col. 30, lines 55-56. As a result, the layer opposite the ink-receiving layer comprises an anti-curl layer.

The limitations of the claim, then, are met by the disclosure of the reference.

7. Claims 1-3 and 15-16 are rejected under 35 U.S.C. 102(e) as being anticipated by Omura (US 6051106). Omura discloses a cast-coated paper comprising a binder (e.g., polyvinyl alcohol or gelatin, *see* col. 4, ll 30-31), at least one filler material in the form of a porous inorganic pigment (e.g., silica, titanium dioxide or alumina, *see* col. 4, ll 37-44), and a coagulant such as lactic acid (*see* col. 4, ll 17-19). Pigments such as alumina, silica (SYLOID®), or titanium dioxide are all known porous pigments.

With specific regard to claim 16, Omura discloses that the paper comprises a UV absorber. *See* col. 4, 50-65.

The limitations of the claim are met by the disclosure of the reference.

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Claim Rejections - 35 U.S.C. § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-9 and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Malhotra (5589277) in view of Brugger et al (US 6156419). Applicants claim a recording sheet comprising a support and at least one ink-receiving layer containing a binder, a porous inorganic oxide, and an aliphatic hydroxycarboxylic acid with more than 2 carbon atoms. Malhotra discloses a recording sheet containing lactic acid (i.e., 2-hydroxypropionic acid); *see* col. 18, ll 15-16, and binders such as gelatin; *see* col. 23, ll 31-32. Malhotra further discloses its recording medium comprises filler materials of inorganic oxides. *See* col. 29, ll 10-20. Malhotra does not limit the type of filler pigment that may be used in its sheet, disclosing as examples such pigments as alumina, silica, or titanium dioxide. *See id.* Brugger teaches the use of an aluminum oxide/hydroxide and from 0.04 to 4.2 mole percent of one or more elements of the rare earth metal series of the periodic system of the elements with atomic numbers 57 to 71 relative to Al_2O_3 in an ink jet recording sheet to provide a recording sheet with high ink absorption rates and excellent image quality. *See* col. 2, ll 49-57. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the porous aluminum oxide/hydroxide of Brugger in the ink-receiving substrate of Malhotra, motivated by the desire of providing a recording sheet with high ink absorption rates and excellent image quality, as taught by Brugger on col. 2, ll 49-57.

With specific regard to claim 5, *see* col. 7, l 62.

With specific regard to claim 6, Brugger discloses that its pigment comprises pseudo-boehmite. *See* col. 3, ll 47-49.

With respect to claim 8, "even though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art,

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the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 227 USPQ 964, 966. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). *See* MPEP §2113.

With respect to claim 9, Malhotra discloses that its binder may comprise gelatin. *See* col. 23, l 31.

With specific regard to claim 13, Brugger discloses that its earth metal salt is lanthanum nitrate. *See* col. 9, ll 44-46.

With respect to claim 14, cross-linking agents are conventional additive in the art, designed to improve the water-resistance and image retention properties of a layer. Consequently, its use in either the sheet of Malhotra would have been obvious.

With specific regard to claim 16, Malhotra discloses that the recording sheet contains brighteners. *See* col. 29, ll 32-34.

With specific regard to claims 17-18, the coating layer is applied via, e.g., dip coating. *See* col. 29, l 43 through col. 30, 21. It is inherent that a portion of the coating permeates the substrate, while the remaining portion is part of the ink-receptive coating. As such, the lactic acid and the pigment are not only in the same layer (i.e., the substrate), but are in separate layers (i.e., the substrate and the ink-receptive coating).

With specific regard to claim 19, The experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicant’s claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. Thickness is a conventional concern in the art, designed to provided the desired level of substrate coverage (to enable ink-receptivity), as well as to ensure the medium can be fed through a printing mechanism. Consequently, it would be obvious to optimize.

With specific regard to claim 20, since the layer formed by a dip coating process, it possesses an ink receptive coating on both the front and back sides. *See* col. 29, l 43 through col. 30, l 21. The ink-receptive coating, moreover,

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acts as an anti-curl layer. *See* col. 30, lines 55-56. As such, the layer opposite the ink-receiving layer comprises an anti-curl layer.

10. Claims 1-9 and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Omura (US 6051106) in view of Brugger (US 5156419). Omura discloses a cast-coated paper comprising a binder (e.g., polyvinyl alcohol or gelatin, *see* col. 4, ll 30-31) and a coagulant such as lactic acid (*see* col. 4, ll 17-19). Omura further discloses its paper comprises pigments such as inorganic oxides (e.g., titanium dioxide or alumina). *See* col. 4, ll 37-44. Omura does not limit the type of pigment that may be used in its paper. Brugger teaches the use of an aluminum oxide/hydroxide and from 0.04 to 4.2 mole percent of one or more elements of the rare earth metal series of the periodic system of the elements with atomic numbers 57 to 71 relative to Al_2O_3 in an ink jet recording sheet to provide a recording sheet with high ink absorption rates and excellent image quality. *See* col. 2, ll 49-57. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the porous aluminum oxide/hydroxide and rare earth metals of Brugger in the ink-receiving paper of Omura, motivated by the desire of providing a recording sheet with high ink absorption rates and excellent image quality, as taught by Brugger on col. 2, ll 49-57.

With specific regard to claim 5, *see* col. 7, l 62.

With specific regard to claim 6, Brugger discloses that its pigment comprises pseudo-boehmite. *See* col. 3, ll 47-49.

With respect to claim 8, "even though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). *See* MPEP §2113.

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With respect to claim 9, Omura discloses that its binder may comprise gelatin. *See* col. 4, l 30.

With specific regard to claim 13, Brugger discloses that its earth metal salt is lanthanum nitrate. *See* col. 9, ll 44-46.

With respect to claim 14, cross-linking agents are conventional additive in the art, designed to improve the water-resistance and image retention properties of a layer. Consequently, its use in the paper of Omura would have been obvious.

With specific regard to claim 16, Omura discloses that the paper comprises a UV absorber. *See* col. 4, 50-65.

With specific regard to claim 19, The experimental modification of this prior art in order to ascertain optimum operating conditions fails to render applicant's claims patentable in the absence of unexpected results. *In re Aller*, 105 USPQ 233. Thickness is a conventional concern in the art, designed to provided the desired level of coverage, as well as to ensure the medium can be fed through a printing mechanism. Consequently, it would be obvious to optimize.

With specific regard to claim 20, since the layer formed by a dip coating process, it possesses an ink receptive coating on both the front and back sides. *See* col. 29, l 43 through col. 30, line 21. The ink-receptive coating, moreover, acts as an anti-curl layer. *See* col. 30, lines 55-56. As such, the layer opposite the ink-receiving layer comprises an anti-curl layer.

11. Claims 1-9 and 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brugger (US 6156149) in view of Malhotra (US 5589277). Brugger discloses a recording sheet for ink jet printing comprising a substrate and an ink-receiving layer. *See* Abstract. The ink-receiving layer comprises a binder such as polyvinyl alcohol (*see* col. 4, ll 14-33), a porous inorganic oxide in the form of an colloidal alumina (pseudo boehmite), and from 0.04 to 4.2 mole percent of one or more elements of the rare earth metal series of the periodic system of the elements with atomic numbers 57 to 71 relative to Al_2O_3 . *See* col. 3, ll 30-49. Malhotra discloses the use of a hydroxy acid (e.g., lactic acid) as a binder in an recording sheet, due to its ability to provide a recording sheet with rapid drying times and reduced curling. *See* col. 10, ll 21-52. It would have been obvious to one of ordinary skill in the art at the time of the invention to use lactic acid

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in the ink receiving layer of Brugger, motivated by the desire to provide a receiving layer with improved drying times and reduced curling, as taught by Malhotra on col. 10, ll 21-52.

With specific regard to claim 8, "even though product-by process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966. Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983). *See* MPEP §2113.

With specific regard to claim 13, Brugger discloses that its earth metal salt is lanthanum nitrate. *See* col. 9, ll 44-46.

With specific regard to claim 14, Brugger discloses that its layer may further comprise a cross linking agent. *See* col. 4, ll 40-47.

With specific regard to claim 15, Brugger discloses that its ink-receiving layer comprises a filler such as silica. *See* col. 5, ll 1-10.

With specific regard to claim 16, Brugger discloses that its ink-receiving layer comprises surfactants. *See* col. 5, ll 51-64.

With specific regard to claims 17 and 18, Brugger discloses the recording sheet may comprise several layers. *See* col. 6, ll 36-48.

With specific regard to claim 19, Brugger discloses that the thickness of its ink-receiving layer comprises a thickness of 0.5 to 100 μm . *See* col. 6, ll 32-34.

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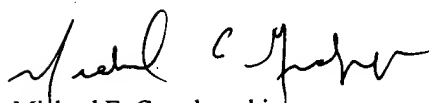
With specific regard to claim 20, an anti-static layer or an anti-curl layer are both well known in the art. Their use would have been obvious to one of ordinary skill in the art at the time of the invention, motivated by the desire of limiting the static between adjacent recording media, or to minimize the curling of such media.

Conclusion

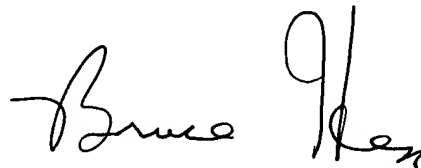
12. Should you have any questions concerning this communication, please direct them to Michael E. Grendzynski at telephone number (703) 305-0593. The examiner can be reached at this number from 7:00 a.m. to 3:30 p.m. Monday-Friday. If attempts to reach the examiner by telephone prove unsuccessful, the examiner's supervisor, Cynthia Kelly, can be reached at (703) 308-0449. Please allow the examiner twenty-four hours to return your call.

A facsimile center has been established for Group 1700 on the 8th floor of Crystal Plaza 3. The hours of operation are Monday through Friday, 8:45 am to 4:45 pm. The fax numbers for Art Unit 1774 are (703) 305-3599 for official after final faxes, and (703)305-5408 for all other official faxes. Use of the Group 1700 center will facilitate rapid delivery of materials to examiners in Art Unit 1774.

Any inquiry of a general nature, or those relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-2351.



Michael E. Grendzynski
Assistant Examiner
June 14, 2001



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